

REMARKS

Favorable reconsideration is respectfully requested.

The claims are 1-11.

Claims 1-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Barton et al. {J. Chem. Soc., Perkin Transactions 1, 1975, pp. 1610-1614}, in view of Van Laar et al. {Chem. Commun., pp. 267-268}.

This rejection is respectfully traversed.

The Official Action states on page 4 that "the molybdate ion, coupled with alkaline H_2O_2 , is known in the art as a catalyst system that can generate singlet oxygen". It refers to Van Laar (Chem. Comm. 1998, 267-8), which notes on page 267 (1st column) and page 268(2nd column) that the homogeneous molybdate system requires the presence of a soluble base (alkaline conditions). Since the present invention does not require the presence of base under the conditions recited and (no base is added in the examples), the fact that Applicants observed singlet oxygen activity with homogeneous molybdate in organic solvents WITHOUT added base, the present invention is clearly unobvious from the combined teachings of Van Laar and Barton.

Further, it should be noted that such base is expressly excluded by the "consisting essentially of" format of claims 9 and 10.

Further, the Official Action suggests that the molybdate mediated oxidation of V into VI as described by Barton might also proceed via singlet oxygen, because the reaction conditions described by Barton for the molybdate mediated oxygen (tert.butanol solvent; room temperature?) are different from those used for cerium (tert.butanol solvent; 65°C).

Thus, the Official Action assumes that the fact that VI instead of VII is obtained with molybdate might result from the difference in temperature. In reply, this is very unlikely, since Barton describes on page 1612 (1st column) that with photochemically generated singlet oxygen at room temperature, V is transformed into IX as the major product after reduction, IX being the reduction product of VII. Photochemical oxidation has been carried out at room temperature because heating is very uncommon for photochemical singlet oxygenations and because the temperature is not

specified (similar to the absence of any specification for the temperature at which the molybdate oxidations were carried out, which are assumed to be carried out at room temperature).

Summing up, the presently claimed process is not obvious to an art-skilled person in view of Barton and Van Laar, since there are several important differences.


Firstly, Barton describes cerium or molybdate **mediated** oxidations, whereas the present invention uses only **catalytic** amounts of, for example, molybdate and secondly according the present invention, no base is required and is expressly excluded in claims 9 and 10, whereas Van Laar clearly teaches that the homogenous molybdate system does require such a base.

No further issues remaining, allowance of this application is respectfully requested.

If the Examiner has any comments or proposals for expediting prosecution, please contact undersigned at the telephone number below.

Respectfully submitted,

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